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REMARKS

This amendment is responsive to the Office Action dated September 21, 2006, for which a three (3) month period of response was given. A petition and fee for a three (3) month extension of time accompany this paper. Additionally, a Request for Continued Examination (RCE) and applicable fee is included herewith. However, should any additional fees, or petitions be due, this paper the Commissioner is hereby authorized to charge this fee and any other necessary fees to, to Deposit Account No. 50-0959, Docket Number 089498.0354.

Claims 1, 2, 4, 5 and 7 through 20 are pending in the present application upon entry of the above amended claims. Claims 3, 6 and 21 through 30 have been, or were previously, cancelled. Claims 1, 7 and 12 have been amended to more clearly state the nature of the present invention. Support for the amendments to claims 1, 7 and 12 exists in the specification and Figures as filed. Accordingly, entry and consideration of the amendments to the claims, and the remarks which follow, is believed due and is respectfully requested.

I. The 35 U.S.C. §112, First Paragraph, Rejection:

Claim 7 has been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner contends that claim 7 contains subject matter that was not adequately described in the specification in such a way as to reasonably convey to one of skill in the art that the inventors, at the time the present patent application was filed, had possession of the claimed invention. In regard to claim 7, the Examiner points out that claim 7 recites "the core has a rectangular cross-sectional shape," and that this phrase is unsupported by the present application as originally filed.

In response, claim 7 has been amended to state that "the combination of the resin outer layer and the core has a rectangular-cross sectional shape." Since the subject matter of amended claim 7 is supported by Figure 3 as filed, it is believed that the 35 U.S.C. §112, first paragraph, rejection of claim 7 has been rendered moot. Accordingly, withdrawal of this rejection is believed due and is respectfully requested.

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II. The 35 U.S.C. § 102(b) Rejections:

Claims 1, 2, 4, 5, and 9 through 20 have been rejected under 35 U.S.C. § 102(b) over Fish (United States Patent No. 6,454,251). Specifically, the Examiner contends that Fish discloses a spring wire comprising a core that includes a plurality of fiber tows and an outer layer of resin that is substantially devoid of the fiber tows. Furthermore, the Examiner contends that the spring wire has a constant thickness and cross-sectional shape, and is generally uniform and free of surface irregularities. Applicant respectfully disagree.

Upon reviewing Fish, it is apparent that Fish does not disclose a spring having a constant thickness, or a uniform and smooth surface, where the uniform and smooth surface is the result of a combination of a resin outer layer and a core.

As is correctly pointed out by the Examiner, Fish requires the use of a copper cladding to achieve a smooth and uniform surface. As would be apparent to one of ordinary skill in the art, the use of a copper cladding layer materially affects the performance of any spring that contains such a copper cladding layer.

Given the above, Fish clearly fails to disclose, teach or suggest a fiber-reinforced composite spring that contains a uniform and smooth surface that is the result of a combination of a resin outer layer and a core. Thus, the core structure of Fish fails to disclose or suggest each and every element of the presently claimed invention. As such, Fish can not anticipate or render obvious claims 1, 2, 4, 5 and 9 through 20. Accordingly, withdrawal of this rejection is believed due and is respectfully requested.

Claims 1, 2, 4, 5 and 8 through 20 have been rejected under 35 U.S.C. § 102(b) over Reinhart et al. (United States Patent No. 2,852,424). Specifically, the Examiner asserts that Reinhart et al. discloses a spring wire comprising a core that includes a plurality of fiber tows. Furthermore, the Examiner contends that Reinhart et al. discloses an outer layer of resin that is substantially devoid of the fiber tows because fiber tows that are saturated with resin must inherently have a layer of resin. Additionally, the Examiner contends that the spring wire set forth in Reinhart et al. has a constant thickness and cross-sectional shape, and is generally uniform and free from surface irregularities. In this regard, the Examiner asserts that the cladding set forth in Reinhart et al. would inherently provide an extremely smooth outer surface and constant cross-sectional shape. Applicants

respectfully disagree.

Initially, the Examiner has no basis for asserting that an "extremely smooth outer surface and constant cross-sectional shape" is inherent to any structure disclosed in Reinhart et al. To the contrary, Reinhart et al. discloses the opposite. Specifically, Reinhart et al. discloses soaking glass rovings in a trough of resin, and then drawing them through a tube (see column 2, lines 29 through 37). Given this disclosure, one of ordinary skill in the art would readily recognize that this process would clearly result in an irregular and textured surface. This is because fibers are located very close to the surface that is in contact with the tubing so that only a thin layer of resin lies between such fibers and the tubing. Thus, surface tension will force the resin to conform to the fiber surface, thereby exposing the contours thereof.

Furthermore, in the absence of some effort to place an additional gap-filling layer of resin between the fibers and the tubing disclosed in Reinhart et al. a smooth layer as suggested by the Examiner would not occur. Therefore, the process set forth in Reinhart et al. can not produce the presently claimed fiber-reinforced composite spring. As such, Reinhart et al. can not anticipate or render obvious claims 1, 2, 4, 5 and 8 through 20. Accordingly, withdrawal of this rejection is believed due and is respectfully requested.

Claims 1, 2, 4, 5 and 9 through 20 have been rejected under 35 U.S.C. § 102(b) over Hashimoto (United States Patent No. 4,473,217). Specifically, the Examiner asserts that Hashimoto discloses a fiber-reinforced resin coil spring impregnated with thermosetting resin. In detail, the Examiner asserts that the spring of Hashimoto includes a resin-impregnated and twisted rod-shaped fiber bundle formed by bundling a plurality of fiber wire blanks made of glass or carbon, immersing the fiber bundle and twisting the rod-shaped fiber bundle in a thermosetting resin, and forming coiled twisted rod-shaped fiber bundle from the resin-immersed and twisted rod-shaped fiber bundle. The Examiner points out that a "generally" uniform surface is obtained in Hashimoto by covering the twisted rod-shaped fiber bundle with a water-soluble vinyl alcohol tape and then twisting the tape-covered fiber bundle around a core with a groove therein to form the spring (see column 3, lines 7 through 23). Applicant respectfully disagree.

Given the disclosure contained in Hashimoto, the spring made by the process disclosed therein must have irregularities. This is because the tape used to cover twisted rod-shaped fiber bundle is not disclosed to be thick enough to smooth out the irregularities that exist in the twisted rod-shaped fiber bundle. Thus, absent some explicit evidence to the contrary, the Examiner can not rely on an inherency argument to reject pending claims 1, 2, 4, 5 and 9 through 20 over Hashimoto.

In this regard, the Examiner is reminded of the following. The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 28 USPQ.2d 1955, 1957 (Fed. Cir. 1993). To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." In re Robertson, 49 USPQ.2d 1949 (Fed. Cir. 1999). Furthermore, it is well settled that "[i]nherency . . . may not be established by probabilities or possibilities. There mere fact that a certain thing may result from a given set of circumstances is not sufficient." Id. *quoting* In re Oelrich, 212 USPQ 323, 326 (CCPA 1981).

Thus, in the absence of some explicit evidence, Hashimoto fails to disclosure, teach or suggest a fiber-reinforced composite spring that contains a uniform and smooth surface that is the result of a combination of a resin outer layer and a core. As such, Hashimoto can not anticipate or render obvious claims 1, 2, 4, 5 and 9 through 20. Accordingly, withdrawal of this rejection is believed due and is respectfully requested.

Claims 1, 2, 4, 5 and 10 through 20 have been rejected under 35 U.S.C. § 102(b) over Taylor (United States Patent No. 4,991,827). Specifically, the Examiner asserts that Taylor discloses a spring consisting of a rope having a plurality of strands each containing a plurality of monofilaments, and a cured binder which has saturated the rope under pressure to cause it to be self-sustaining in spring form. As disclosed in Taylor, the process for forming such a spring involves saturating a rope with resin, allowing a portion of resin to drain from the rope, and then drawing the saturated rope through a tube. Optionally, the tube can be subjected to a high-pressure fluid to increase the filament to resin ratio. The tube can then be formed into a spring by winding it around a mandrel. The

resin is then cured, and the tube may or may not be removed.

Given the disclosure contained in Taylor, one of ordinary skill in the art would recognize that Taylor fails to disclose a spring having a core and resin outer layer that in combination have a constant cross-sectional thickness and are free of any surface irregularities. All that is disclosed by Taylor are springs that have regular surfaces due to a tube or a combination of a tube and at least a second resin layer. The present invention does away with such additional process steps by forming a smooth, regular surface with the combination of a core and resin outer layer. As such, Taylor fails to anticipate pending claims 1, 2, 4, 5, and 10 through 20. Accordingly, withdrawal of this rejection is believed due and is respectfully requested.

III. The 35 U.S.C. § 103(a) Rejections:

Claim 7 has been rejected under 35 U.S.C. § 103(a) over the combination of Fish (United States Patent No. 6,454,251) and Petrina (United States Patent No. 6,612,556). The teachings of Fish are discussed in detail above.

Turning to Petrina, Petrina discloses a single spring unit that includes a multi-helical spring formed of a composite material where such springs can have rectangular cross-sectional shapes. It should be noted that disclosure of Petrina fails to disclose, teach or suggest a core and resin outer layer that in combination have a constant cross-sectional thickness and are free of any surface irregularities. As such, the teachings of Petrina fails to cure the deficiencies of Fish.

Accordingly, in light of the above, claim 7 is patentable over the combination of Fish and Petrina, and as such withdrawal of this rejection is believed due and is respectfully requested.

Claim 7 has been rejected under 35 U.S.C. § 103(a) over the combination of Taylor (United States Patent No. 4,991,827) and Petrina (United States Patent No. 6,612,556). The teachings of Taylor are discussed in detail above.

Turning to Petrina, Petrina discloses a single spring unit that includes a multi-helical spring formed of a composite material where such springs can have rectangular cross-sectional shapes. It should be noted that disclosure of Petrina fails to disclose, teach or

suggest a core and resin outer layer that in combination have a constant cross-sectional thickness and are free of any surface irregularities. As such, the teachings of Petrina fails to cure the deficiencies of Taylor.

Accordingly, in light of the above, claim 7 is patentable over the combination of Taylor and Petrina, and as such withdrawal of this rejection is believed due and is respectfully requested.

Claim 7 has been rejected under 35 U.S.C. § 103(a) over the combination of Hashimoto (United States Patent No. 4,473,217) and Petrina (United States Patent No. 6,612,556). The teachings of Hashimoto are discussed in detail above. Additionally, as is noted above, Hashimoto discloses only springs that have therein surface irregularities.

Turning to Petrina, Petrina discloses a single spring unit that includes a multi-helical spring formed of a composite material where such springs can have rectangular cross-sectional shapes. It should be noted that disclosure of Petrina fails to disclose, teach or suggest a core and resin outer layer that in combination have a constant cross-sectional thickness and are free of any surface irregularities. As such, the teachings of Petrina fails to cure the deficiencies of Hashimoto.

Accordingly, in light of the above, claim 7 is patentable over the combination of Hashimoto and Petrina, and as such withdrawal of this rejection is believed due and is respectfully requested.

Claim 7 has been rejected under 35 U.S.C. § 103(a) over the combination of Reinhart et al. (United States Patent No. 2,852,424) and Petrina (United States Patent No. 6,612,556). The teachings of Reinhart et al. are discussed in detail above. As is discussed above, the spring of Reinhart et al. is believed to contain surface irregularities due to the process used to make same.

Turning to Petrina, Petrina discloses a single spring unit that includes a multi-helical spring formed of a composite material where such springs can have rectangular cross-sectional shapes. It should be noted that disclosure of Petrina fails to disclose, teach or suggest a core and resin outer layer that in combination have a constant cross-sectional thickness and are free of any surface irregularities. As such, the teachings of Petrina fails to cure the deficiencies of Reinhart et al.

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Accordingly, in light of the above, claim 7 is patentable over the combination of Reinhart et al. and Petrina, and as such withdrawal of this rejection is believed due and is respectfully requested.

IV. Conclusion:

Accordingly, reconsideration and withdrawal of the 35 U.S.C. § 112, first paragraph, rejection, the 35 U.S.C. § 102(b) rejections, and the 35 U.S.C. § 103(a) rejections is believed due and is respectfully requested.

For at least the foregoing reasons, the present application is believed to be in condition for allowance, and a Notice of Allowance is respectfully requested.

Should the Examiner wish to discuss any of the foregoing in more detail, the undersigned attorney would welcome a telephone call.

Respectfully submitted,

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